

Strategies to Prevent (STOP) Spillover

A protocol for evaluating community-level zoonotic disease risk-reduction interventions



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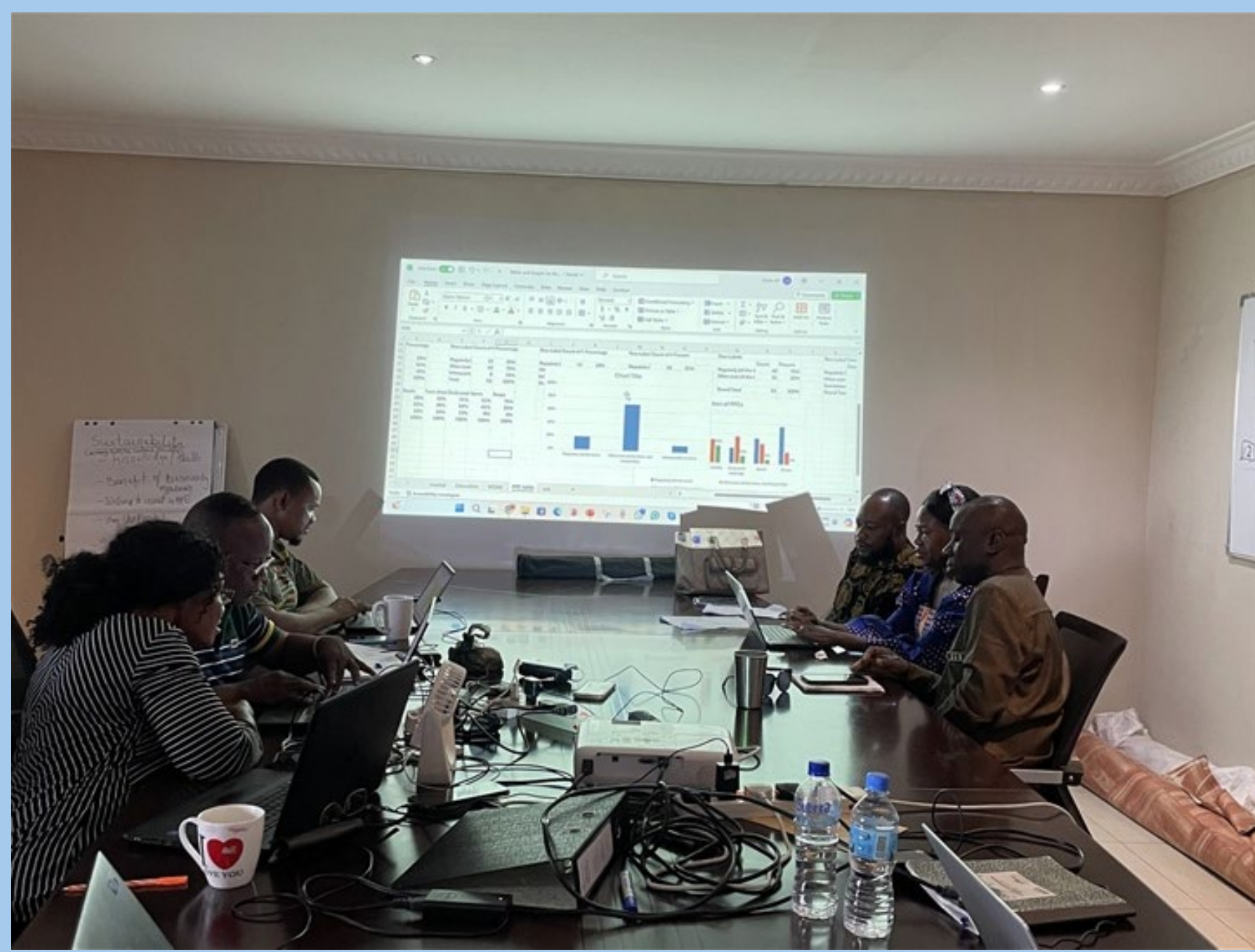
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Background

Strategies to Prevent Spillover (or STOP Spillover) is a USAID funded program developing interventions to reduce risks associated with viral zoonotic disease threats. STOP Spillover enhances global understanding of the complex causes of the spread of a selected group of known zoonotic viruses from animals to humans. The project builds government and stakeholder capacity in priority Asian and African countries to identify, assess, and monitor risks associated with these viruses and develop proven risk reduction measures. **“Spillover”** refers to an event in which an emerging zoonotic virus is transferred from a non-human animal host species (livestock or wildlife) to another, or to humans.

Here, we highlight the **STOP Spillover approach to evaluating interventions** aimed at reducing human exposure to non-human animal viral threats at characterized high-risk spillover interfaces.

Elements of this protocol and guidance may be adopted or adapted by researchers and implementers interested in validating spillover risk-reduction interventions at the community level prior to scale up.



Data analysis workshop by the STOP Spillover Sierra Leone country team and Consortium technical team, 2024



Community meeting among wildlife farmers to review intervention efficacy results (TIPs) and teach-back lessons learned among the group. Vietnam, 2023

Methods

STOP Spillover’s approach to intervention validation was **designed via stakeholder engagement and an iterative process** across seven countries in South and Southeast Asia (Bangladesh, Vietnam, and Cambodia) and Sub-Saharan Africa (Liberia, Sierra Leone, Cote D’Ivoire, and Uganda).

A structured review of intervention validation methodologies was conducted during which One Health experts across nine countries were consulted to provide feedback and recommendations. Using a consensus-driven approach, the STOP Spillover intervention validation guidelines were designed, tested, adapted, and implemented to address risks associated with wildlife farming, wild meat markets, community-level biosafety interventions at various non-human animal-human interfaces across seven countries.

Intervention Guidelines were distributed to all teams and Zoom-based and in-person training was provided to ensure systematic design, data collection, and analysis of intervention implementation. Data forms were developed using KoboToolBox and data were stored using password-protected Excel files in GENOME, the STOP Spillover M&E system.

Results

STOP Spillover’s approach to intervention validation involves a two-part sequential progressive process:

First teams test **intervention efficacy** followed by **intervention effectiveness**.

Intervention efficacy (often via **Trials of Improved Practices (TIPs)**) involves a multi-step process including an adaptive evaluation of community level adoption at a small scale (does the intervention result in the desired change in a few settings?), as well as mixed methods measurement of appropriateness, feasibility, cost, and acceptability.

Results are then analyzed and used to inform **intervention effectiveness trials** which evaluate the performance of an intervention under less-controlled ‘real world’ conditions in multiple interface sites for the target hazard. Effectiveness studies account for external individual, interpersonal, and system-level factors that may moderate an intervention’s effect during smaller-scale efficacy studies. Data are collected systematically throughout both efficacy and effectiveness trials so that

Results, cont.

study teams can **measure changes from baseline data collection** and may **adapt intervention strategy or methods throughout implementation**. In most cases, **composite outcomes are preferred**, to reflect the multidimensionality and interaction of various practices/behaviors on risk reduction outcomes.

Data are reported back to community stakeholders routinely to reinforce benefits and motivate community members to make lasting behavioral changes. This adaptive and multi-stage process ensures that external and internal factors are measured and accounted for – specifically because we understand that behaviors and incentives are not stagnant.



(L) Commune Committee worker in Cambodia interviewing bat guano farmer about PPE acceptability during efficacy trial; (R) Efficacy trial data review with trial participants in Dong Nai provinces, Vietnam, 2023

Conclusions

Evaluation of community-level interventions to reduce risks associated with zoonotic disease spillover is of utmost importance. While many approaches have been implemented, the STOP Spillover approach is a stepwise process that leverages evidence for adaptation and sustainability. Here, we share evidence from our engagement across seven countries, demonstrating the advantages of the STOP Spillover approach to intervention validation. With evidence from current and future interventions, the One Health community can enact sustainable behavior and policy change to reduce risks of zoonotic viral threats. **STOP Spillover’s Intervention Validation Guidelines are publicly available and can be requested by emailing Jonathon.Gass@Tufts.edu**

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